

REMARKS

By this Amendment, claims 15, 22 and 29 are amended. Claims 16-21, 23-28 and 30-37 remain in the application. Thus, claims 15-37 are active in the application. Reexamination and reconsideration of the application are respectfully requested.

In item 1 on page 2 of the Office Action, claims 15-37 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the Applicant regards as the invention. In particular, the Examiner asserted that it is unclear whether the prepositional phrase “for presenting the service” in the preambles of claims 15, 22 and 29 refer to the “system”, the “service”, the “content” or the “user interface”, or whether the phrase “stored in said system” refers to the “user interface”, the “service” or the “content”.

In view of the rejection of claims 15, 22 and 29 under 35 U.S.C. § 112, second paragraph, the preambles of claims 15, 22 and 29 have been amended herein in order to more definitely claim the subject matter which the Applicant regards as the invention. In particular, the preamble of claim 15 has been amended to recite “A storage-based broadcasting system for supplying a user interface to present a service, the user interface being unique to the service, which is composed of content stored in said system”. Similar amendments were made to the preamble of claim 29. The preamble of claim 22 was also amended to recite “A control content transmission method for providing a user interface to present a service, the user interface being unique to the service, which is composed of content that is stored in a storage-based broadcasting system”.

In addition, the Examiner also asserted that the verb “realize” in line 6 of claim 15 and in line 5 of claim 29 and the verb “realizing” in line 5 of claim 22 are ambiguous as used in these claims. Accordingly, claims 15 and 29 have each been amended to recite that the control content is transmitted so as to “generate”, instead of realize, the user interface. Similarly, claim 22 has been amended to recite transmitting a control content for “generating”, instead of realizing, the user interface.

Further, the Examiner has also asserted that it is unclear whether the terms “as the content in its entirety or as part of the content” in lines 5-6 of claim 22 modifies the “control content” or

the “user interface”. Claim 22 has been amended to recite “transmitting a control content, in a non-executable data format, for generating the user interface, the control content being transmitted as the content in its entirety or as part of the content”.

In view of the amendments made to claims 15, 22 and 29 as described above, the Applicant respectfully submits that claims 15, 22 and 29 are each definite as they particularly point out and distinctly claim the subject matter which the Applicant regards as the invention. Accordingly, the Applicant respectfully requests the Examiner to withdraw the rejection of claims 15-37 under 35 U.S.C. § 112, second paragraph.

On pages 4-5 of the Office Action, the Examiner provided an explanation of the interpretation of the limitations presented in the claims in view of the disclosure of the specification. The Applicant presents the following comments to the Examiner’s interpretation of the claims.

A. The Examiner has interpreted that the limitations “supplying a user interface” and transmitting a “user interface” do not mean that a user interface program, such as a Netscape or Internet Explorer, is transmitted. Instead, the Examiner has interpreted the limitations “supplying a user interface” and transmitting a “user interface” mean that only browser *content* is transmitted. The Examiner cites pages 16-22 of the substitute specification to support this interpretation. However, the Applicant respectfully disagrees with the Examiner’s interpretation that supplying or transmitting a user interface does not mean that a user interface program is actually transmitted.

Initially, claims 15, 22 and 29 each recite that the control content is transmitted “as the content in its entirety or as part of the content”. Accordingly, claims 15, 22 and 29 each require that the control content be transmitted as at least some portion of the transmitted content.

For the purposes of illustrating that the transmission of the control content (browser content) does indeed operate to transmit a user interface program, which is generated by the browser content, the Applicant refers to the first embodiment, Figure 1 and Figures 5-6 as an example of the disclosure of the present application.

As described in lines 4-8 on page 16 of the substitute specification, each content body storage 113 stores a content body Dc, which is substance data of each service to be presented. That is, the content body Dc is the substance of the content C composing each corresponding service (see lines 24-25 on page 18 of the substitute specification). Each content body storage 113 provides the respective content body Dc to the content body pitcher 14, which pitches, or sends, the provided content body Dc to the content assembler. Further, as described in lines 9-14 on page 16 of the substitute specification, the content assembler produces a content header Hc and assembles the received content body Dc and the content header Hc into a content C. Thus, the content C which is transmitted from the transmitting apparatus is composed of a content body Dc and a content header Hc, which identifies whether the content body Dc is a browser content body DcB or a service content body DcS (see lines 20-21 on page 20 and lines 19-22 on page 21 of the substitute specification).

The content C is multiplexed with the service property information Isp by the multiplexer 115, and the transmitter 116 modulates the multiplexed service property information Isp and the content C into a digital bit stream and transmits the digital bit stream to the delivery system 120. The digital bit stream is then transmitted from the delivery system 120 to the receiver 131 of the receiving apparatus 130. The de-multiplexer 132 demultiplexes the received digital bit stream and transmits the content C to the storage 133.

As described beginning in line 21 on page 17 of the substitute specification, the storage 133 stores a service content C(Sm, O) and a browser content C(Sm, Bflg) received from the de-multiplexer 132. Accordingly, since the storage 133 stores a service content C(Sm, O) and a browser content C(Sm, Bflg) that are received from the de-multiplexer 132, a service content C(Sm, O) and a browser content C(Sm, Bflg) are transmitted together over the same transmission path from the transmitting apparatus 110 as the content C. That is, the content C which is transmitted from the transmitting apparatus includes browser content Cb (C(Sm, Bflg)) and service content Cs (C(Sm, O)). The browser content Cb is composed of a browser content body DcB (Dc(Sm, Bflg)) and a browser content header HcB, and the service content Cs is composed

of a service content body DcS (Dc(Sm, O)) and a service content header HcS (see line 21 on page 19 to line 1 on page 20 of the substitute specification and Figures 5-6).

Further, as described from line 25 on page 17 to line 4 on page 18 of the substitute specification, the service content Cs is defined as a non-executable service substance such as a broadcast program or data that is provided by the storage-based broadcasting system which is to be viewed and/or used by a user. The browser content Cb realizes (generates) a user interface for the user to enjoy and use the provided service on the receiving apparatus 130. Moreover, the browser content Cb is specifically defined as “control code executable under a program code execution environment provided by the receiving apparatus 130, and targets the service content C(Sm, O) for processing”. The browser content body DcB is generated from a browser B(S1) for the service S1, for example, in the same format as the content body Dc, which is a non-executable file (see lines 8-10 on page 19 of the substitute specification). Further, as defined in line 1 on page 2 of the substitute specification, a browser is a user interface for viewing contents. As defined in lines 13-15 on page 3 of the substitute specification, a browser is an executable computer program written in the native code of a CPU in the receiving apparatus of the storage-based broadcasting system.

In addition, while the service content Cs is a non-executable file and the browser content is generated from an executable browser for generating a unique user interface for the service that the browser content corresponds to, the browser content Cb is converted into a non-executable file. That is, the browser content body DcB and the service content body DcS are the same in data format (a non-executable data format), and therefore, the content body storage 113 cannot discriminate therebetween (see lines 15-20 on page 19 of the substitute specification). Thus, the content body storage 113 treats both the browser content body DcB and the service content body DcS as a non-executable content body Dc. In other words, although the browser content Cb is itself an executable file, the browser content Cb is transmitted in the form of a non-executable file together with the non-executable service content Cs as a non-executable content C.

Therefore, the present application clearly discloses that browser content (control content), which is an executable file, and service content, which is a non-executable file, are both

transmitted by the transmitting apparatus 110, 710, 1010 and 1510 over the same transmission path as a non-executable file to the receiving apparatus 130 as a content C. Accordingly, as recited in claims 15, 22 and 29, the executable control content is transmitted as the content in its entirety or as a part of the content and generates a user interface, and thus, claims 15, 22 and 29 must therefore be interpreted as reciting that an executable user interface is transmitted in the form of a non-executable content C.

B. The Applicant agrees to the Examiner's interpretation that the term "service", as recited in the claims, means any content specific web information sent as a package. For example, as illustrated in Figure 4, services may be "Today's News", "Useful Information", or "New Car Guide". As defined in at least claims 15, 22 and 29, the service is composed of content. Further, as described above, the service content is a non-executable file for presenting the service.

C. As described above, claims 15, 22 and 29 have been amended to recite that the control content is transmitted so as to generate, instead of realize, the user interface. Accordingly, the Applicant submits that claims 15, 22 and 29 should be interpreted in view of the amendments made thereto.

D. The Applicant agrees with the Examiner's interpretation that "control content" means the "browser content" as used in the specification. In particular, the Applicant directs the Examiner's attention to lines 2-3 on page 18 of the substitute specification, which describes that "[t]he browser content C(Sm, Bflg) is control code executable under a program code execution environment provided by the receiving apparatus 130, and targets the service content C(Sm, O) for processing".

For clarification purposes, the "control content", as discussed above, is itself an executable file, i.e., an executable browser, that is used to generate the user interface which is unique to each service. For instance, as illustrated in Figure 7, for example, the browser content C(S1, Bflg) is transmitted together with the service content C(S1, 1) and C(S1, 2), which compose the service content for the service S1. Accordingly, the control content (browser content) C(S1, 1) is executable code which the computer of the receiving apparatus uses to execute a unique browser for presenting the service S1 to the user. However, as described above, the control content is

converted from an executable data format into a non-executable data format to be transmitted as the content C.

E. The Applicant agrees with the Examiner's interpretation that the term "pitch", as recited in the claims, means "send". The Applicant directs the Examiner's attention to lines 7-8 on page 16 and lines 6-7 on page 22 of the substitute specification in which the term "pitch" is clearly defined as meaning "send".

F. The Applicant agrees with the Examiner's interpretation that the terms "service property information" and "properties of the service" mean information that "connotes any 'properties' associated with the specific web pages that constitute the 'service'". For instance, the Applicant directs the Examiner's attention to lines 21-23 on page 18 of the substitute specification in which the service property information Isp is defined as indicating "a property of each service to be provided by the storage-based broadcasting system". For clarification purposes, and with reference to the first embodiment as an example of the disclosure of the present application, the service property information Isp is stored in the service property storage 111 and is multiplexed with the content C (which includes the content body Dc (DcS and DcB) and the content header Hc) by the multiplexer 115. As described in lines 5-14 on page 20 of the substitute specification and as illustrated in Figure 4, the service property information Isp relates to each service (S1, S2, S3...Sn) and includes a service ID and a service name for identifying each service to be provided to the user.

In item 2 on page 5 of the Office Action, claims 15-18, 21-25, 28-32 and 35-37 were rejected under 35 U.S.C. § 102(e) as being anticipated by Durham (U.S. 6,330,566). Without intending to acquiesce to the Examiner's rejection of claims 15, 22 and 29, claims 15, 22 and 29 were each amended in order to more clearly illustrate the marked differences between the present invention and the applied references.

The present invention provides a system and method which can eliminate the various inefficiencies and problems of conventional storage-based (push-type) broadcasting systems which use separate transmission methods for the transmission of a browser and for the transmission of a service content. The inefficiencies and problems of such conventional storage-based broadcasting

systems are (1) an interference between browser transmission and service content transmission due to different transmission methods which are used for the browser and service content transmission; and (2) a need for different transmission methods for a plurality of services.

Accordingly, an object of the present invention is to provide a system and method for providing a flexible user interface for services in storage-based (push-type) broadcasting in which a service is composed of a plurality of contents that are transmitted in digital broadcasting or a computer network. The present invention achieves this object, in part, by transmitting an executable control content, which is used for generating and executing a user interface which is unique to a service, and service content, which is a non-executable file and which represents the substance of the service, as a non-executable content C to a receiving apparatus. The inventions of claims 15, 22 and 29 achieve the stated object as described above.

Claim 15, as amended, recites a storage-based broadcasting system for supplying a user interface to present a service, where the user interface is a unique to the service, which is composed of content stored in the system. The system of claim 15 comprises transmission means for transmitting a control content, in a non-executable data format, as the content in its entirety or as part of the content, the control content being transmitted by the transmission means so as to generate the user interface. The system of claim 15 also comprises receiving means for receiving and activating the transmitted control content so as to execute the user interface, wherein the user interface is transmitted by the transmission means as the control content and received by the receiving means as at least part of the content.

Claim 29, as amended, recites a storage-based broadcasting system operable to supply a user interface to present a service, where the user interface is a unique to the service, which is composed of content stored in the system. The system of claim 29 comprises a transmission unit operable to transmit a control content, in a non-executable data format, as the content in its entirety or as part of the content, the transmission unit transmitting the control content so as to generate the user interface. The system of claim 29 also comprises a receiving unit operable to receive the content including the control content, and to activate the transmitted control content

so as to execute the user interface, wherein the user interface is transmitted by the transmission unit as the control content and received by the receiving unit as at least part of the content.

Claim 22, as amended, recites a control content transmission method for providing a user interface to present a service, where the user interface being unique to the service, which is composed of content that is stored in a storage-based broadcasting system. The method of claim 22 comprises transmitting a control content for generating the user interface, the control content being transmitted as the content in its entirety or as part of the content and in a non-executable data format. The method of claim 22 also comprises receiving the content including the transmitted control content, and activating the transmitted control content so as to execute the user interface.

In the last paragraph on page 8 of the Office Action, the Examiner indicated that the “only difference between [claims 15 and 29] is a matter of semantics”. The Examiner is reminded that claims which are written with means-plus-function language are to be construed under 35 U.S.C. § 112, sixth paragraph. Accordingly, claim 15 is to be afforded a construction under 35 U.S.C. § 112, sixth paragraph. However, while claim 29 is similar to claim 15, claim 29 was not written with means-plus-function language, and therefore, claim 29 is not to be afforded a construction under 35 U.S.C. § 112, sixth paragraph. Therefore, the Applicant respectfully submits that the difference between claims 15 and 29 is not only “a matter of semantics”.

Nonetheless, the Applicant respectfully submits that Durham does not anticipate, suggest or render obvious claims 15, 22 and 29 for the following reasons.

Durham provides a system and method for reducing browser latency in customized web page production through caching in one or more client-shared tokens a compressed representation of a core set of user information preferences. Durham essentially provides a system and method which optimizes cookie distribution and usage between a server and a user’s (client) computer. In particular, Durham discloses that a globally unique client ID (GUID) is cached in a client-stored cookie along with a set of user data (such as preferences) which are generally applicable to the user’s interaction with a server. To reduce overhead in transferring the cookie, preferences can be combined and compressed. By storing the GUID, a server is able to look up and track all of the

client's data in a local database, and can retrieve data which is specific to a particular client request. Further, Durham discloses that by storing core data, such as page formatting and content preferences ("personalization settings"), the server can tailor the client's experience without having to incur the cost of database look-ups. Additionally, a cookie-version number can be embedded to indicate how a server should interpret an incoming cookie (see Column 3, lines 5-21).

The Examiner is interpreting the World Wide Web Server (remote computer 49) (see Column 6, lines 55-58) as corresponding to the storage-based broadcasting system of the present invention. Durham, however, merely discloses that cookies and unique (non-executable) service content data (web page data) are stored in the server (remote computer) and transmitted to the client's computer, which includes an executable browser. The executable browser of the client's computer is not transmitted to the client computer from the server. Further, cookies are not content as recited in the claims and as used in the specification. As defined in Durham, a cookie is updateable token information which is specific to the server's network location and which is passed between the server and the client to allow server tracking of client activity. That is, the cookie is transmitted from the server to the client computer in lieu of multiple login requirements (see Column 1, line 67 to Column 2, line 6). When the client selects a link, the server receives a request with embedded information (the cookie) identifying the client, thereby allowing the server to track the client's actions and to send a web page (as a content) to the client (see Column 1, lines 58-65). Cookies, however, are not themselves displayed by the browser at the client's computer (receiving end). Instead, cookies are sent to the server where a content to be presented by the server is then generated, or cookies are sent from the server to the client's computer. Therefore, the content is not the cookie; the web page which is sent from the server is the content.

However, as described above, the storage-based broadcasting system of the present invention stores non-executable content C in the transmitting means or transmitting unit of the system before the content is transmitted to the receiving means or receiving unit. Further, as described above, the non-executable contents which are transmitted include a executable control

content C_b and a non-executable service content C_s. Accordingly, the system of the present invention transmits a non-executable content C in which an executable control content C_b is converted, where the control content is for generating and executing the user interface which is unique to a service.

Durham, however, does not transmit control content “so as to generate the user interface”, where the control content (an executable file) is transmitted in a non-executable data format, as recited in claims 15, 22 and 29. Instead, Durham merely provides that “the user interface (e.g., a web page) is presented to the client” (see Column 10, lines 35-36). The unique web page is sent from the server to the client after the client enters his or her personalization preferences. Once the personalization is complete, the settings are written to a server user-property database and are used to generate a compressed cookie. The compressed cookie is included in a response-page header (response header) when an HTTP response is generated to the initial client contact request. A response header includes information which represents the location of an HTML file on a network. Code within the response page disassembles the compressed cookie and uses its contents to generate the page according to the user preferences which are stored in the cookie (see Column 9, line 66 to Column 10, line 11).

Accordingly, while Durham discloses that a “user interface”, which is defined as a web page, is transmitted to the client, the “user interface” is merely a non-executable file for presenting service contents. Moreover, Durham discloses, in Column 1, lines 37-40, that a “web browser” is synonymous with a “client”. However, Durham does not disclose, suggest or even contemplate a system or method to convert an executable control content to be converted into and sent as a non-executable content C, as recited in claims 15, 22 and 29.

It appears that the Examiner has interpreted the cookie and HTML text as corresponding to the “content” and the “control content”, respectively, as recited in claims 15, 22 and 29. However, as recited in claims 15, 22 and 29, the control content (browser content) is transmitted as at least part of the content. Durham discloses the conventional technique of transmitting cookies over the Internet. It should be noted, however, that the cookie transmission method (transmission protocol) is different and separate from the transmission method for HTML files.

For the Examiner's convenience, the Applicants submit herewith technical articles explaining the transmission protocol of cookies (RFC2109 is submitted as Appendix A, and RFC 2965 is submitted as Appendix B).

According to the first paragraph of section 4.2.1 on page 3 of RFC2109, cookies are transmitted by including "Set-Cookie" in a response header according to the HTTP protocol. Although this might seem to mean that cookies are transmitted under the HTTP protocol, the transmission protocol for cookies defines a completely different layer in the transmission protocol. That is, the handling of cookies as separated from the response header is an additional process which is not performed to the HTTP protocol. As discussed above, a response header includes information which represents the location of an HTML file on a network.

The HTTP protocol is a protocol for transmitting HTML text. Durham transmits HTML text under the conventional HTTP protocol and transmits cookies under the conventional cookie transmission protocol. Therefore, even if the Examiner is to consider the cookies as "content" and the HTML text as "control content", Durham does not disclose or suggest that the cookies and the HTML text are transferred together as "content", as recited in claims 15, 22 and 29. That is, Durham transmits HTML text for a web page under the conventional HTTP protocol and transmits cookies under the conventional cookie transmission protocol, which are two distinct and separate methods of transmission. The "content" which is transmitted in the system of Durham does not include control content which is an executable file but which has been converted into a non-executable file to be transmitted together with service content as a content C.

Accordingly, Durham clearly fails to recognize the distinction between an executable file such as control content (browser content) and a non-executable content which includes the executable control content and non-executable service content. Furthermore, Durham also fails to disclose or suggest transmitting both control content and service content as one content C over the same transmission path. Therefore, Durham clearly fails to disclose or suggest a transmission means for transmitting a control content, in a non-executable data format, as the content in its entirety or as part of the content, the control content being transmitted by the transmission means so as to generate the user interface, as recited in claim 15, or a transmission unit operable to

transmit a control content, in a non-executable data format, as the content in its entirety or as part of the content, the transmission unit transmitting the control content so as to generate the user interface, as recited in claim 29. Similarly, Durham also fails to disclose or suggest transmitting a control content for generating the user interface, the control content being transmitted as the content in its entirety or as part of the content and in a non-executable data format, as recited in claim 29.

Therefore, Durham clearly fails to disclose or suggest each and every limitation of claims 15, 22 and 29. Accordingly, claims 15, 22 and 29 are clearly not anticipated by Durham since Durham fails to disclose each and every limitation of claims 15, 22 and 29.

In item 3 on page 9 of the Office Action, claims 19-20, 26-27 and 33-34 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Durham in view of Herz et al. (U.S. 5,835,087). As described above, Durham clearly fails to disclose or suggest each and every limitation of claims 15, 22 and 29. For the following reasons, Herz et al. fails to cure the deficiencies of Durham for failing to disclose each and every limitation of claims 15, 22 and 29.

Herz et al. discloses a system which generates customized electronic identifications of user-desired objects such as news articles for electronic media such as the Internet. The system of Herz et al. automatically constructs both a target profile for each object based on the frequency with which each word appears in an article relative to its overall frequency in all articles, and a target profile interest summary for each user which describes the user's interests. The system of Herz et al. evaluates the target profile of each object against the user's target profile interest summary so as to generate a user-customized rank ordered listing of target objects which will most likely be of interest to the user. Then, the user is able to select an object from among the objects listed in the generated user-customized rank ordered listing which the system automatically generated based on the user's target profile interest summary. The system of Herz et al. also provides a cryptographically based proxy server to ensure the privacy of the user's target profile interest summary. The cryptographically based proxy server uses public keys and electronic signatures as a means to ensure the privacy of the user's target profile interest summary and the objects which the user is interested in viewing.

However, similar to Durham, Herz et al. also does not disclose or suggest that an executable control content is transmitted in a non-executable data format as the content in its entirety or as part of the content, where the control content is transmitted so as to generate a user interface, as recited in claims 15, 22 and 29. Further, Herz et al. also does not disclose or suggest that the user interface is transmitted as the control content and received as at least part of the content, as recited in claims 15 and 29.

Accordingly, Herz et al. clearly fails to cure the deficiencies of Durham for failing to disclose each and every limitation of claims 15, 22 and 29. Therefore, no obvious combination of Durham and Herz et al. would result in the inventions of claims 15, 22 and 29 since Durham and Herz et al., either individually or in combination, fail to disclose or suggest each and every limitation of claims 15, 22 and 29.

Moreover, it is submitted that the clear distinctions discussed above are such that a person having ordinary skill in the art at the time the invention was made would not have been motivated to modify Durham and Herz et al. in such a manner as to result in, or otherwise render obvious, the present invention as recited in claims 15, 22 and 29. Therefore, it is submitted that claims 15, 22 and 29, as well as claims 16-21, 23-28 and 30-37 which depend therefrom, are clearly allowable over the prior art as applied by the Examiner.

In view of the foregoing amendments and remarks, it is respectfully submitted that the present application is clearly in condition for allowance. An early notice thereof is respectfully solicited.

If, after reviewing this Amendment, the Examiner feels there are any issues remaining which must be resolved before the application can be passed to issue, it is respectfully requested that the Examiner contact the undersigned by telephone in order to resolve such issues.

A fee and a Petition for a two-month Extension of Time are filed herewith pursuant to 37 CFR § 1.136(a).

Respectfully submitted,

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